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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,460	02/06/2005	Kazuhide Nakajima	14321.65	5805

22913 7590 10/02/2006

WORKMAN NYDEGGER  
(F/K/A WORKMAN NYDEGGER & SEELEY)  
60 EAST SOUTH TEMPLE  
1000 EAGLE GATE TOWER  
SALT LAKE CITY, UT 84111

EXAMINER

CONNELLY CUSHWA, MICHELLE R

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/523,460

Applicant(s)

NAKAJIMA ET AL.

Examiner

Michelle R. Connelly-Cushwa

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

- A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 5-7 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/14/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

The prior art documents submitted by applicant in the Information Disclosure Statement filed on November 14, 2005 have all been considered and made of record (note the attached copy of form PTO-1449).

### ***Drawings***

Ten (10) sheets of drawings and four (4) replacement sheets of drawings were filed on February 6, 2005. The drawings are acceptable.

### ***Specification***

Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 5-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Regarding claim 5; the claim recites the limitation "said hole-assisted single mode optical fiber has zero-dispersion wavelength characteristics conforming to the

ITU-T recommendation G.652" in lines 11-12 of the claim. This claim renders the claim indefinite because it recites a standard and standards may be revised and/or changed over time. The Examiner suggests removing the reference to the standard from the claim.

Regarding claim 6; the claim recites "as claimed in claim 1" in line 1 of claim 6, which renders the claim indefinite because claim 1 has been cancelled.

Regarding claim 7; the claim recites "effective core radius in line 14 of the claim. This limitation should be changed to --effective core area--, since it is an area that is being defined.

***Allowable Subject Matter***

**Claims 5 and 7 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.**

The following is a statement of reasons for the indication of allowable subject matter: The prior art cited on attached form PTO-892 is the most relevant prior art known, however, the invention of claims 5 and 7 distinguishes over the prior art of record because none of the references either alone or in combination disclose or render obvious a hole-assisted single mode optical fiber comprising a first cladding region, a core region, and a second cladding region including at least four air holes regions, as required by each of claims 5 and 7, wherein

- the zero-dispersion wavelength is in a range from 1300 nm to 1324 nm, the fiber has a bending loss equal to or less than 1 dB/m at a bending radius of 10 mm, and variations in mode field

diameter by providing the air hold regions I equal to or less than  $\pm 10\%$ , as defined in claim 5; or

- a relative index difference is in a range from 0.05% to 0.12%, an effective core radius from the core region to an extreme circumference of the air hole regions is in a range from 23 to 28  $\mu\text{m}$ , a theoretical cutoff wavelength is equal to or less than 1100 nm, a bending loss is equal to or less than 1 dB/m at a bending radius of 10 mm, and an effective core area is equal to or greater than 150  $\mu\text{m}^2$ , as defined in claim 7.

Hence, there is no reason or motivation for one of ordinary skill in the art to use the prior art of record to make the invention of claims 5 and 7.

### ***Conclusion***

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.

Art Unit: 2874

*Michelle R. Connelly-Cushwa*

Michelle R. Connelly-Cushwa

Patent Examiner

September 21, 2006